

Community Assistantship Program

Report to Sylvan Shores Property Owners Association

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Report to Sylvan Shores Property Owners Association

Conducted on behalf of
Sylvan Shores Property Owners Association

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CURA RESOURCE COLLECTION

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Table Of Contents

	Page
Executive Summary	1
Acknowledgments	2
Introduction	
Sylvan Shores Property Owners Assoc.	3
Goals and Objectives	4
Methods and Data Collection	5
Results	
Incorporation	
The Process	7
The Statutory City	9
The Home Rule City	11
Costs and Benefits of Incorporating	12
Sustainable Development	
Definitions	15
Alternative Energy	16
Cluster System Development	19
Alternative Building Materials	20
Education	21
Recommendations and Summary	21
APPENDIX A: Contact Information	24
APPENDIX B: Sources	27
APPENDIX C: Map of Sylvan Shores	30

EXECUTIVE SUMMARY - SSPOA

In August of 2000, Sylvan Shores Property Owners Association (SSPOA) received funding from the Center for Urban and Regional Affairs (CURA), at the University of Minnesota's Humphrey Institute, for a research assistant to explore sustainable development strategies and analyze the pro's and con's of incorporating versus remaining an association. The need to address incorporation came as a result of many new property owners at Sylvan Shores, particularly a large increase in Russian immigrants. SSPOA is currently trying to preserve open-spaces/ green-spaces and promote "quiet businesses."

Information was collected in a variety of ways. First, Minnesota Planning and the research department of the Minnesota Department of Economic Development was able to provide information on the actual process of becoming a city. Secondly, a wide variety of books were researched to gain an extensive understanding of ecological design, cluster system development, solar and wind power, land use management, and regulations for local governments. Thirdly, the Minnesota Sustainable Communities Network, a creation of the Office of Environmental Assistance, held their annual conference on October 13, 2000; guidebooks and model statutes for local governments, as well as information on alternative energy systems, were collected here. Next, phone calls and Internet searches were used to contact independent contractors (alternative energy systems, sewage systems, architects, engineers, etc.) and to gather planning resources. Lastly, the research assistant, Nathan Dorr, attended monthly SSPOA board meetings and planning committee meetings with the purpose of directing and limiting the research process. The information was collected to help SSPOA make well-educated policy decisions, as well as to develop a resource for future builders in Sylvan Shores.

The research findings explain the legal process of incorporation, and identify communal will as the backbone of sustainable development. As for the time being, SSPOA has not decided to incorporate. SSPOA currently enjoys flexibility through less formal board meetings, lower annual membership dues (compared to further city taxation), and the ability to operate outside

the statutory rules set by the state of Minnesota under the “city code”. Research on sustainable development for Mid-Western communities is growing, focusing primarily on urban sprawl and economic development. For SSPOA, a search for *ecological design* provided the best information for a smaller community still in the “infancy” stage of city development. By thinking of urban sprawl as a form of “cancer,” SSPOA’s diagnosis is very healthy. However, as any form of disease, by following the preventive measures outlined in this report, Sylvan Shores can strategically plan to secure open-spaces while promoting a healthy economy. Methodology, current definitions, SSPOA assessment, the legal process of incorporation, cost-benefit analysis of incorporation, and recommendations/ summary are included in the body of the report. Model statutes, alternative energy system designers, contractors, and a list of educational resources are given in the report’s supporting appendix.

ACKNOWLEDGMENTS

As the research assistant on this project, I would first like to thank the community of Sylvan Shores, as well as board member Carol Spearman, President Keith Syvertsen, Manager Betty Marotzke, and all active members. I applaud the efforts of Sylvan Shores for taking the right steps to incorporate economic development with environmental preservation and ensuring a high quality of life for all generations.

Thank you to the Community Assistantship Program and the Center for Urban and Regional Affairs (CURA) at the Humphrey Institute (University of Minnesota) for coordinating the funding for this important and developing research area. Thank you to the McKnight Foundation for supplying funding for the project.

Finally, I would like to thank the Minnesota Department of Economic Development, the Minnesota Sustainable Communities Network, and the Environmental Protection Agency for providing excellent resources for this project. Also, thank you to Senator Anthony Kinkel from Minnesota District 4, for being my mentor.

INTRODUCTION

Sylvan Shores Property Owners' Association (SSPOA)

Sylvan Shores Property Owners' Association (SSPOA) is a non-profit organization whose mission is to acquire and improve common places to "promote the common benefit and enjoyment [for all] property owners of Sylvan Shores." The by-laws of SSPOA were adopted in July of 1976, and amended in March 1977 and August 1983; which outline purpose (Article II), membership (Article III), evidence of membership and transfer (Article IV), meetings of members (Article V), assessments to property owners association (Article VI), finance (Article VII), special assessments (Article VIII), the board of directors (Article XI), officers (Article X), general provisions (Article XI), obligation to comply with rules and by-laws (Article XII), indemnification of directors, officers, and employees (Article XIII), amendments (Article XIV), and interim membership of board of directors (Article XV). Currently, Sylvan Shores has focused on purchasing properties within its boundaries, for use as common space and recreation, and to fulfill its mission.

Revenue for SSPOA's operations comes from annual assessments, as defined in Sylvan Shores' Restrictive Covenants, Article X. The first lot a family or individual owns is assessed \$90, and \$35 for each additional lot. SSPOA's treasurer report shows assessment income of \$135, 504 as of October 28, 2000; accounting for 95% of receipts. Also, SSPOA receives about \$12,500 annually from its permanent and temporary campsites. With the revenue gained from assessments and campsites, Sylvan Shores is able to purchase property and maintain common buildings. With this revenue flow, and a board elected by SSPOA members, Sylvan Shores operates very much like a typical city.

The number of property owners at Sylvan Shores is currently 1,353; of which only 71 are year-round residents and 35 are seasonal residents. The population is expected to increase due to a large number of adjoining properties recently bought by a Russian collective. Facing a possible population boom, the need for businesses and public services will soon expand; currently there are only a few in-home businesses in operation. SSPOA is strategically planning

to limit certain types of businesses entering its boundaries, specifically placing tight restrictions on businesses attracting heavy traffic or requiring large parking spaces. Currently, no commercial businesses exist in the bounds of Sylvan Shores, as outlined in SSPOA's Restrictive Covenants Articles VI & VII. Two small cities, within 15 - 20 miles of Sylvan Shores (Staples, MN and Motley, MN), provide adequate services and economic opportunity for SSPOA property owners.

Goals and Objectives of the Research Project

The purpose for this project is to better understand the concepts of sustainable development, the feasibility of maintaining environmental integrity as population grows, and to identify stress indicators that force communities to incorporate. The result of the research is to be used as a guidebook for local governing bodies and future builders. A main goal of the project for SSPOA was to determine the costs and benefits of remaining an association versus incorporating. A second goal was to collect materials and resources for a reference library for future builders at Sylvan Shores.

To reach these goals, it was important that the following objectives were met:

- Gain a current understanding of sustainable development issues, policies, models, and definitions.
- Identify the legal path SSPOA would take to become incorporated.
- Identify social and financial costs of becoming incorporated.
- Identify which model of city governance SSPOA would most easily fit.
- Create guidebooks and/or resources for both SSPOA board members and future builders at Sylvan Shores.

Each objective was designed to establish measures of progress toward meeting each goal. The findings of each objective are further addressed in the methodology and results section of the report.

METHODS AND DATA COLLECTION

This section is organized to show the methods of data collection for each objective. The process of data collection is important to explain the conclusions and recommendations addressed later in the report. The methodology goes as follows:

1. *Gain a current understanding of sustainable development issues, policies, models, and definitions.*

Methodology: Library research, Internet searches, and information gathered at an annual conference of the Minnesota Sustainable Communities Network provided a wealth of resources useful in reaching this objective. The conference was excellent for furthering discussion on sustainable development, and developing tools for policy implementation.

2. *Identify the legal path SSPOA would take to become incorporated.*

Methodology: Form and Structure of the Minnesota City, a publication from the Minnesota Office of Economic Development's research department, proved to be the best resource for identifying the options SSPOA has for incorporation. It lays out the court process, the citizen and board voting requirements, and the four styles of government in Minnesota cities.

3. *Identify social and financial costs of becoming incorporated.*

Methodology: Attending SSPOA board meetings and planning committee meetings allowed for an assessment of SSPOA board member values, for the purpose of determining social costs. Conducting telephone interviews with environmental and waste management consultants was helpful in

attempting financial costs of constructing a common sewage system at Sylvan Shores. Lastly, the costs of public services were discussed at board meetings and through telephone conversations with the Minnesota Department of Economic Development.

4. *Identify which model of city governance structure SSPOA would most easily fit.*

Methodology: Resources acquired from the Minnesota Sustainable Communities Conference and the Minnesota Department of Economic Development were compared to SSPOA's current governing structure. A formal assessment of SSPOA's member voting rights, manager/ board/ president professional relationships, and SSPOA planning committee reports was required here.

5. *Create guidebooks and/or resources for both SSPOA board members and future builders at Sylvan Shores.*

Methodology: Publications from Minnesota Planning, the Environmental Protection Agency and the Minnesota Sustainable Communities Network provided excellent material for local governing boards and future builders. Moreover, Internet and library searches provided great hands-on resources for future builders interested in preserving open spaces and using alternative materials and energy systems.

Methodological Challenges

- Minnesota state departments often had little information to field questions. Most phone calls were transferred several times, often without answers or direction. Especially, locating contractors to construct solar power energy and common septic systems for

SSPOA members was difficult.

- Access to certain material was limited, due to purchasing and shipping costs involved. However, as a result of the growing amount of literature on sustainable development and ecological design, the conclusion of the report is not compromised.
- Determining the actual social costs of incorporating was slightly difficult. Because social costs are based on the values held by each SSPOA member, and are not objective, they are subject to change and reinterpretation over time.
- Time was a factor limiting the depth of sustainability research. Because the area is broad and in constant development, this report only addresses the key elements of sustainability.

RESULTS

The process of incorporation and description of statutory and home rule cities is a summary of Form and Structure of the Minnesota City Ch. 1- 4.

Incorporation

The Process

The Office of Strategic and Long-Range Planning and the Board of Hearing Examiners for the state of Minnesota make decisions on incorporation. The Board of Hearing Examiners consists of three governor-appointed members and two county commissioners from the community's home county. Rules of practice must be followed by all communities and cities during incorporation proceedings (p. 14).

Before the hearing process begins, the community must formally decide whether a *citizen petition* or *board resolution* will start the proceedings. Initiation by petition requires 100 or more resident property owner signatures. Initiation by resolution requires the governing board of the community to pass a resolution, stating the intent to begin incorporation proceedings (p. 16).

The incorporation petition or resolution must be filed with the executive director of the

Board of Hearing Examiners, and it must include the following (p. 16):

- the proposed name of the city
- the names of all parties entitled to mailed notice, under law
- the reason for incorporation
- the map showing the proposed boundaries of the area to be incorporated

Once the incorporation petition or resolution is filed with the Board of Hearing Examiners, a notice of public hearing is ordered. Shortly after the notice, the Board of Hearing Examiners holds a public hearing. This provides an opportunity for everyone affected by the incorporation to voice their concerns and address possible conflicts before a decision is made. If the Board of Hearing Examiners decides in favor of incorporation, an order will be made to formalize the decision. Once the Board of Hearing Examiners develops a ward system for choosing an odd number (3, 5, or 7) of council members, an election is held (p. 17).

Although newly incorporated cities operate under Statutory Plan A (discussed in the next section), cities can choose between four types of city organization once incorporated. They are weak mayor-council, strong mayor-council, council-manager, and commission (which is no longer used in Minnesota). A *weak mayor-council* grants the same powers to the mayor as to board members, with exception of the mayor's duty to preside over council meetings. This is the most popular form of organization in Minnesota cities (p. 5).

The *strong mayor-council* form of organization is rare in Minnesota. It gives the mayor duties to appoint/ remove department heads, veto/ pass council legislation, and prepare budgets for council approval. The council is used to legislate, pass budgets and bond issues, and review mayoral and administrative actions (p. 6). This form is much like the state's organization, and may best fit larger urban areas.

The *council-manager* form of organization is only for home rule cities and those operating under statutory Optional Plan B (discussed in the next section). In this form, the council has all policy and legislative authority. The manager is appointed based on professional expertise, for an indefinite length of time. The manager operates the city like a nonprofit organization; hiring department heads, creating budgets for council approval, and carrying out council decisions. Although council decisions are based on manager recommendations, the

manager does not have voting power (p. 6).

Based on these governance forms, the state of Minnesota operates two styles of city government, the home-rule city and statutory city. Under the statutory city, the Minnesota legislature has established three city models: the Standard Plan, Plan A, and Optional Plan B. On the other hand, a home-rule city is commonly referred to as a charter city, and operates by voter approved legislation.

The Statutory City

The three models of statutory cities are defined under Chapter 412 of Minnesota Statutes, the city code. See Internet source in Appendix B for Ch. 412 of Minnesota Statutes for the city code.

The Standard Plan has four distinct features (p. 44):

- Five or seven council members -which includes the mayor, clerk, and 3 or 5 elected council members
- Voter elected clerk and treasurer - positions may be combined into one elected clerk-treasurer - who holds voting power in council meetings
- Council has all administrative and legislative authority and responsibility
- Council can appoint advisory boards and commissions, and delegate functions of these bodies.

Before 1970, the majority of smaller cities in Minnesota operated under The Standard Plan. Still, about 130 of 853 Minnesota cities remain on this plan (p. 45).

Plan A is the most common form of city government, representing nearly 600 of Minnesota cities. In fact, all new cities are incorporated under Plan A, but may change to other plans by submission to a public vote (p. 52). The distinctive characteristics of Plan A government are (p. 46):

- Five or seven member council - which includes the mayor and 4 or 6 elected council members

- Council appointed clerk and treasurer (or combined clerk-treasurer) for an indefinite term - who holds no voting powers in council meetings
- Council appointed administrative personnel (police chief, attorney, municipal fire chief, and liquor store manager)
- Council holds all the same administrative and legislative authority and responsibilities of a Standard Plan city
- Residency is not a pre-qualification for administrative positions.

Optional Plan B embodies the council-manager plan of city government (p. 46).

Presently, 16 statutory cities and about 30 home rule cities operate under an Optional Plan B.

Distinctive features of the Optional Plan B are (p. 47):

- Five or seven member council - which includes the mayor, and 4 or 6 elected council members
- Council appointed manager (on the basis of training, qualifications, and experience) for an indefinite term
- Manager-appointed clerk, treasurer, and all other subordinate officers - council may combine or abolish offices
- Extensive manager duties; including administrative control over all city departments, financial reporting to council, chief purchasing agent for the city, recommending welfare measures to council, budget estimates, and creation of an administrative code.
- All administrative boards and commissions replaced by city council, except advisory boards and civil service commissions

Changing to Optional Plan B requires a majority vote on a public ballot. The question on the ballot is to read (p. 52): “Shall Optional Plan B, providing for the council-manager form of city government, be adopted for the government of the city?” followed by the words “yes” or “no”. Passage of the decision cannot be changed for 3 years. The clerk must then notify the county auditor and the secretary of state, by filing a certificate of election; which includes the question, the vote count, and date of the election.

Some general powers of the statutory city include, but are not limited to (p. 56): prescribing duties, compensation, and benefits to its employees; making annual tax levies and exercising all financial authority over the city; prosecute people in violation of ordinances; purchasing gas, electricity, water or heat for whole-sale and resell it to local consumers; borrowing money; acquiring and maintaining a municipal forest; and opening libraries.

The Home Rule City

The home rule city (or charter city) derives its authority from a voter-approved home rule charter. This allows the city flexibility to address issues not covered by the Minnesota legislature under a statutory plan. Home rule cities can exercise all authority outlined by the charter, and within state laws. Currently, 107 Minnesota cities operate under a voter-approved charter (p. 62). To adopt a home rule charter, cities are encouraged to contact the League of Minnesota Cities (p. 65). This is a great resource for building a good charter.

The appointment of a charter commission is necessary to develop the charter and inform the public of charter ballot issues. The charter commission can be appointed by, 1) the district court within which the city lies, operating under its own discretion, 2) the district court, as mandated by a petition signed by 10 % of those who voted in the last city election, or 3) the district court, as mandated by resolution of the city council. Further, all those appointed to the charter commission must be residents of the city, and may only serve two years (p. 65).

To amend a home rule charter, cities have five options (p. 71). They are:

- by proposal of the charter commission
- by petition signed by 5 % of the total votes cast in the last city election
- by city council proposal, subject to charter commission review
- by charter commission recommendation to the city council to amend the charter as an ordinance; to which a petition signed by 2 % of the voters in the last city election can force a referendum on the amendment
- a four-fifths city council vote, by-passing the charter commission, which is then submitted to public vote; requiring two weeks notice before the vote is called

All amendments require a 51 % vote in favor of accepting the ordinance.

Some general powers of a home rule city include, but are not limited to (p. 72): providing municipal powers not delegated by the Legislature; the authority to levy property tax, sales tax, and income tax; choosing a budget and accounting system; utility regulation; establishment of municipal utilities; setting procedures for appointments/ removals of non-elected officials; and general regulations of activities (p. 76).

Costs and Benefits of Incorporating

When considering whether to incorporate, communities ought to consider the following financial and social costs and benefits involved. Note that points listed in the cost-benefit analysis are not exclusive; some can be used either in financial costs or social benefits. For example, the financial costs of taxation and increased bureaucracy may lead to social benefits of improved services and accountability.

Financial Costs

The financial costs of incorporation are major concerns for small communities with small budgets. The actual process of incorporation does require a fair amount of expenditure, yet considerably less than the continued costs of running the city; like administration or city service costs.

Below is a list of financial costs facing communities during and after the incorporation process. Actual financial costs are not included here, since fees differ depending on the type of service provided, the population served, and the area served. Financial costs are not limited to those listed.

City level

- legal costs of courts and lawyers (in hundreds or thousands of dollars)
- loss of flexibility in accounting and budgeting
- cost of consulting and assessing common sewage systems and common energy systems
(in thousands of dollars)
- costs of building common septic and energy systems (in millions of dollars)
- administrative costs

- costs of providing around-the-clock services (police, fire, energy, road maintenance)

Individual level

- increased taxes
- increased volunteer time during the incorporation process, and/ or creation of a home rule charter; missed opportunity costs

Social Costs

Social costs are hard to place numbers on, but are as important as financial costs. A structural change in the community has social-symbolic affects on the public.

Below is a list of social costs, both before and after the incorporation process.

City level

- loss of flexibility in council meetings
- residency is required for council membership and administrative positions - bad for seasonal residents who want to serve under statutory plans
- increased bureaucratic image
- loss of informal council meetings

Individual level

- possible increase of public distrust in local government - fear of “red tape”
- volunteer time invested in meetings, petition drives, or charter creation

Financial Benefits

Financial benefits of incorporation can vary by population size, area served, and the type of services provided. Communities with small budgets can increase their financial position by effectively securing resources from the state and Federal government, also by controlling local monopolies and utilities.

Below is a list of financial benefits for incorporated cities. The benefits are not limited to those listed, and may vary across cities.

City level

- state grants for roads
- state grants for education
- state grants for public libraries
- Federal and state aid for services and utilities
- wholesale and resale purchasing power
- standardized accounting principles - which allows for comparability across cities
- power to issue bonds and increase revenue - rollover accounting
- increased effectiveness in lobbying and gaining resources

Individual level

- possible tax breaks depending on local ordinances (ie. solar energy tax breaks)

Social Benefits

The social benefits of incorporation are broad, ranging from public safety to environmental preservation. Once again, the social benefits are listed below; of which some or all may vary depending on the community and the services provided.

City level

- stability
- increased efficiency and accountability in the structure of a city bureaucracy
- prosecution of ordinance violations/ increased ability to enforce laws
- statutory cities provide uniformity and comparability
- ability to incorporate alternative energy and collective sewage systems - improving environmental conditions
- increased community identity
- local residents serve on city council and administration - increased knowledge of current local issues
- relieved strain on surrounding communities who provide fire and police services

Individual level

- stability
- increased public safety
- access to utilities and public services - paved roads, sewage, garbage/ recycling, etc
- increase of jobs related to city development, services, and administration
- home rule charters improve citizen involvement and awareness
- strengthened local identity

Summary of Cost-Benefit Analysis

As outlined in Form and Structure of the Minnesota City, “the basic goal of city government is to provide services” (p. 3). Incorporation does require certain “start up” costs and operational costs, yet those costs benefit the community as a whole. In terms of investing in the future of the community, the costs are balanced by the social benefits. Increased public safety, access to services and utilities, improved roads, and community stability are best attained through the establishment of local government. Once a community feels their needs are not being fulfilled, incorporation may be the answer. Incorporation should be considered as the community grows large enough to put a strain on the services provided by surrounding communities. The largest measure of whether incorporation is beneficial is the size of the resident population. If the tax base is large enough to support public services (fire/ volunteer fire, police, first responders, roads, etc.), then the benefits of incorporation are more likely to outweigh the costs. However, since social costs and benefits are subjective, each community ought to list costs and benefits pertaining to their own situation.

Sustainable Development

Definitions

The definition of sustainable development is not clear to many people. The term “sustainable development” is often used in different ways to explain two different phenomenon. Economically, sustainable development is the idea of creating businesses or organizations to

withstand tides of recession and economic down-turns. This idea is popular with many international businessmen/ women, where capitalist ventures seek to develop sustainable economies overseas. Conversely, sustainable development is often used to refer to a process of maintaining environmental integrity, particularly as population and industry move into a developing community. These two perspectives are not exclusive. In fact, the combination of these ideas are often referred to as “smart growth,” a term that focuses on controlling urban sprawl and developing environmentally conscious economies. Smart growth and sustainable development are key concepts for local governments. At the individual level, the term “ecological design” is important. It describes how builders can build homes that maximize energy efficiency and design neighborhoods to preserve open spaces. Ecological design is derived from the architectural sciences, and is an excellent source of information for all builders in developing communities.

The costs of developing smart growth strategies may concern communities with small budgets. However, as Theodore Panayoton of the United Nations states, “What is lacking is not money to finance sustainable development, but the political will to act innovatively and decisively to translate sustainable development from a political slogan to an operational objective, and ultimately a reality” (Adger p. 68). This section addresses ways to empower both individuals and local governments to create smart growth practices. Alternative energy (solar and wind power), alternative building materials, cluster development, and educational strategies are included in this section.

Alternative Energy

Alternative energy takes two main forms, solar power and wind power. Its popularity is growing quickly as more people become environmentally conscious. And, despite the name, it does not require an alternative lifestyle. Many systems today are advanced enough to run home computers, air conditioners, microwave ovens, and water heaters with little compromise. To supplement heavy usage, people often have back up gas-powered generators or fuel cells. “Living off the grid” is a common term used to describe the rewards of using solar and wind power.

Solar Power

Two types of solar energy are used in the ecological design of buildings, passive and active solar. *Active solar* captures the solar energy in photocells and uses an inverter to create usable household energy. The amount of power created is dependent on the size of the solar panels, the placement of the panels, the amount and angle of sunlight contacting the panels, and the size of the inverter. These systems can supply enough energy for a streetlight or a small community.

Because of its growing popularity, financial institutions are beginning to lend money to help people build with active solar systems. This pay-as-you-go method replaces monthly heat and energy bills. Once the loan is repaid, energy and heat is essentially free to the consumer for remainder of the system's life (which is usually around 30 years). Another benefit of using active solar is increased efficiency; since energy is created on-site rather than delivering power across miles of power lines. In many parts of the U.S., the costs facing local electric companies to serve remote locations can reach costs around \$24,000 per mile of added power line (Stitt p. 89). Further, by not burning coal or oil to produce electrical power, active solar power creates cleaner electricity. The environmental benefits are huge in this area; eliminating acidic rain and the heavy metals that end up in lakes, rivers, and drinking water. However, disposing unusable photocells and invertors still remains an issue for environmentalists. (See Appendices A and B for contractors and resources for active solar energy systems).

Passive solar construction uses the positioning of windows to capture the heat of the sun, and reduce heating costs. The key to using passive solar is controlling the greenhouse effects as light enters a building. Important elements in passive solar construction are the placement of windows and patio doors, the overhang of roofs, and a Trombe wall.

Positioning windows and patio doors to face true south will maximize solar benefit at 100%. A rotation of the windows to 45 degrees from true south will decrease solar benefit to 70%, and 68 degrees from true south yields only 36% solar benefit (Stitt p. 76). Tilting the glass is another way to increase solar efficiency (Stitt p. 84). Solar benefit is also affected by the overhang on roofs. Roof overhang should maximize low-angle winter sunlight entry, while limiting warmer summer sunlight entry (Stitt p. 76). Clearly, the more sunlight entering the

building in the winter helps reduce heating costs, and limiting summer sunlight will reduce cooling costs. Using this same effect, a *Trombe wall* collects solar heat using a black wall inside a glass pane. The airspace in between the glass and the wall heats up, allowing the warm air to enter the building through adjustable vents in the wall. As the air warms, it enters the living space, pulling cool air back in through vents at the bottom of the wall to be reheated. As the sun sets and the outside temperature drops, the vents need to be closed; trapping the warm air inside the living space (Stitt p. 79). Since both passive and active solar systems require large amounts of sunlight, trees and other obstructions must not shadow the building.

To maximize its potential, active and passive solar power requires good insulation, lower ceilings (to keep heat from rising above the living space), and the personal will to use these systems. This means being aware of the energy consumed, and limiting energy usage wherever possible. Any individual or local community interested in pursuing solar energy systems should contact an architect specializing in ecological design, see Appendix A for information.

Wind power

Wind power harnesses wind energy through turbines, with axles positioned either horizontally or vertically. Turbines oriented horizontally are best identified by the typical windmill. Here, wind energy drives three to five giant blades, turning the axle; much like the reverse action of a fan. The motion is transferred into energy, then stored in generators for power consumption (Stitt p. 124). Because this style is most efficient when the blades are facing directly into the wind, a mechanism is needed to control its position. Horizontally aligned turbines are the most common form of wind power, and can be used to power whole communities in systems called wind farms.

Vertically aligned turbines rotate around an up-and-down axle. The blades are much different than horizontally aligned turbines, acting more like sails revolving around a vertical axle. A benefit of this style is that the direction of the wind will not make a difference in the position of the turbine. However, this style of turbine no longer is produced commercially, and the concept is fading (Stitt p. 126).

Wind power is an effective and reliable energy source. Much like solar power systems,

pollutants like heavy metals and acidic rain are eliminated during this method of energy production. Since wind power systems are primarily used in larger energy capacities and the specifics are complex, individuals and communities interested in wind power should contact contractors and suppliers listed in Appendix A.

Cluster System Development

As communities grow, designing neighborhoods becomes an important part of controlling residential sprawl. A form of design called *cluster system development* preserves open spaces by promoting residential infill; clustering groups of homes in a more dense neighborhood. As William H. Whyte states, “The only way to house more people is either to extend the present pattern of sprawl and cover vastly more land or, alternatively, to use less land and increase the carrying capacity of it” (Stitt p. 255).

Easements can help preserve open spaces in large lots, but do not contribute to increasing efficiency in common septic and common energy systems. Cluster neighborhoods increase efficiency by shortening the power and sewage lines needed to serve each house. For example, Whyte suggests quarter-acre lots for free-standing houses as a guideline for promoting residential infill and cluster plots (Stitt p. 261). Local governments and communities can control subdivisions and green spaces, further enforcing cluster development strategies.

Clusters should be developed on land most suitable for construction (DeGrove p. 32). Although it sounds obvious, many homes built too close to lakes or cliffs can be very unstable and may endanger sensitive habitats.

Cluster development has many benefits. Preserving green space is probably the largest social benefit. Green spaces preserve the habitats of many species and maintain a high quality of life for all animals. Also, increased contact between individuals and families create a stronger sense of community, which plays an important role as public safety concerns grow. If a community decides to use common septic systems, a plot of land near the cluster can be used to house common septic tanks. This would lower the financial costs for each household and local municipality when constructing septic systems. Clusters using common alternative energy systems (like solar or wind farms) benefit by increasing their power capacity.

Cluster development is important when planning and building neighborhoods. Because of its complexity, local planners should contact landscape architects specializing in ecological design, and environmental or consulting engineers. These experts can recommend or help find contractors to build cluster projects.

Alternative Building Materials

Using alternative building materials can limit environmental impacts when constructing houses and common buildings. Building homes from straw bales or earthenware are very sustainable and cost-effective. The energy efficiency rating (which measures the resistance of heat flow) for both straw bale and earth cast homes is greater than conventional construction (Stitt p. 171). Also, straw bale houses are less labor intensive, and can be very attractive and comfortable (p. 170). In structural testing, mortared straw bale walls can withstand wind forces of 16 lbs. per square foot, and up to 60 lbs. per square foot of snow (Stitt p. 176). Further, the life-cycle costs of these structures over 30 years on a 3-bedroom 1,375 square foot house can amount to savings of up to \$141, 675; depending on the amount of time the owner invests in its construction (Stitt p. 182-83). Another benefit of straw bale construction is that growing straw only takes one year, where as replacing a tree (used in conventional construction) takes more than 30 years.

Earth cast structures are also very sustainable and cost-effective. The main material in this type of construction is silt. Silt is combined with soil and water to create a concrete, which is then molded into walls (Stitt p. 238). Reinforcement materials, like wood beams and metal chicken wire, are needed to ensure the integrity of this style of home. Creativity is a key to building earth cast homes, since many are built into the side of a hill and covered with earth. The benefits of an earth cover are improved insulation, reduced heating and cooling costs, shelter from adverse weather, and limited environmental impacts.

Although these forms of construction are not mainstream, they offer serious answers to the sustainability issue of preserving environmental integrity. People do not have to adopt alternative lifestyles. In fact, homes using alternative materials can be very elegant and comfortable. However, before building with these materials, people should to consult architects

and experts, as well as check local building ordinances.

Education

Education is the most effective tool in developing sustainable communities, both at the individual level and local government levels. Strategies to educate groups can vary from simple classes, to community education programs, to complex networks of residents and outside organizations. Promoting education about sustainability can evolve through reference libraries and regular community meetings.

Educational programs and teaching guides are available through the Environmental Protection Agency. Teachings are focused on developing recycling programs that reduce waste, reuse salvageable materials, and develop community involvement. This is a useful tool for schools and local governments. Depending on the size and needs of the community, some educational strategies are better suited for certain communities. Educational material and resource information for local governments are listed in Appendix A of the report; allowing each community to develop relevant programs.

Education is very important to achieve a sustainable community, and the need to educate is urgent. The Minnesota Sustainable Communities annual conference (Oct. 13, 2000) stressed the urgency of developing sustainable practices, education, and environmental awareness; believing that each day that passes results in increased sprawl and environmental degradation. Without education and awareness of how our consumption affects our environment, the chances of preserving a high quality of life diminish. Education about sustainable practices is crucial to ensure livable environments for future generations.

RECOMMENDATIONS

Sylvan Shores Property Owners Association (SSPOA) is structurally ready to incorporate, in terms of its governance. Yet, revenue to support public services is not sufficient. Once the population of Sylvan Shores grows large enough to demand public services, local businesses, and can generate the revenue to support an expanded city administration; SSPOA should

incorporate.

In terms of sustainability, SSPOA must do the following: educate residents and future builders, give residents and future builders access to resources, use ordinances to promote sustainability, continue to develop dialog on sustainability within the community, and lobby both local counties and the state for public monies for development projects.

Educating both current and future residents of Sylvan Shores will create community awareness and an understanding of how to maintain the integrity of their natural environment. As discussed previously, educational materials can be accessed through the Environmental Protection Agency and a wide variety of Internet sources. As part of this project, Appendix A lists available Internet resources as of Dec. 30, 2000, as well as contact information for the EPA.

Reading material and references for residents and future residents at Sylvan Shores will allow each household to tailor sustainability practices to their own needs. The Ecological Design Handbook: Sustainable Strategies for Architecture, Landscape Architecture, Interior Design, and Planning, edited by Fred A. Stitt and published by McGraw-Hill Handbooks, is an excellent resource for designing homes and neighborhoods. It focuses on developing communities, reducing wastes while building, conserving energy, and preserving green spaces. Also, the Internet has a number of great resources for home builders and local planners alike. This report includes these Internet sites and other resources in Appendix B.

Ordinances, or restrictive covenants, are great ways for local governing bodies to control growth and develop sustainable strategies. Limiting sub-divisions, restricting certain building materials, transferring or selling development rights, controlling development boundaries, and easements are all practical ways to preserve the surrounding environment. Virginia Stark J.D. has created a compilation of ordinances and policies that promote sustainable practices in local policy making. In Appendices A and B is contact information and Internet resources for local policy makers. Because SSPOA is in the early stages of development, implementing sustainable development policies is critical.

By educating and developing public awareness, communities can develop innovative dialog to strengthen and create new sustainability practices. Annual or semi-annual town meetings allow new ideas to be shared with many people. Also, information systems using

telephones, personal interaction, e-mail/ Internet, and bulletin board postings in common areas will facilitate sustainability and environmental preservation discussion. The Minnesota Sustainable Communities Network (MnSCN) established itself for this specific purpose, linking people and organizations together. This report contains information on MnSCN in Appendix A.

Lastly, lobbying surrounding counties and the Minnesota State Legislature can help SSPOA secure resources for incorporation procedures and local development. The phrase “The squeaky wheel gets the grease,” may best explain how the state legislature determines where to spend its money. Since Sylvan Shores’ property owners pay state taxes, they are entitled to public funding, either directly or through local counties or townships. So, whether SSPOA wants to reduce incorporation costs or create local parks, lobbying local representatives and senators is a viable option to relieve stress on its small budget. The best lobbying methods are face-to-face interactions with legislators, personal telephone calls to legislators, or community based mail or e-mail campaigns. These efforts need to be clear and concise, since time is very limited during legislative sessions. Also, planning ahead is crucial for successful lobbying. Particularly, contacting legislators before the session begins is important.

In summation, Sylvan Shores is not yet ready to incorporate. The need for a larger tax base is the main reason. However, with the possibility of large numbers of Russian immigrants, Sylvan Shores could overcome this obstacle. With the potential for a dramatic increase in population, the need for services and jobs will grow. SSPOA must decide how best to construct the language for sustainable ordinances; ordinances that preserve green spaces, while leaving room to build a healthy economy. SSPOA, and all developing communities, must recognize the urgency of this step. Depending on the success of lobbying efforts and growth in revenues, SSPOA must also determine whether to develop clustered common septic systems or larger scale municipal waste-management systems.

SSPOA will incorporate under statutory Plan A of Minnesota Statutory cities. This style of city government, with a weak mayor-council, describes the current structure of SSPOA’s board; and is the best option for SSPOA when considering incorporation. However, since SSPOA’s board carries out its operations through a manager, they may feel most comfortable under the Optional Plan B.

APPENDIX A: CONTACT INFORMATION

Educational and Resource Contacts

1000 Friends of Minnesota
370 Selby Ave., Suite 300
St. Paul, MN 55102
651-312-1000
www.1000fom.org

Alliance for Sustainability
1521 University Ave. SE
Minneapolis, MN 55414
612-331-1099

Communities by Choice
433 Chestnut Street
Berea, KY 40403-1510
606-985-1763
www.communities-by-choice.org

Crossroads Resource Center
PO Box 7423
Minneapolis, MN 55423
612-869-8664

Eco Education
275 E. 4th Street, Suite 821
St. Paul, MN 55101
651-222-7691
www.blacktop.com/ecoeducation

Environment and Energy Resource Center
427 St. Clair Ave.
St. Paul, MN 55102
651-227-7847

In Business
419 State Ave.
Emmaus, PA 18049-3097
610-967-4135

Institute for a Sustainable Future (ISF)
5815 Glenwood Street
Duluth, MN 55804
218-525-4781
www.isfusa.org

The Land Stewardship Letter
2200 4th Street
White Bear Lake, MN 55110
651-653-0618

The Metropolitan Council
230 E. 5th Street
St. Paul, MN 55101
651-602-1000
www.metrocouncil.org

Minnesota Lakes Association
PO Box 321
Brainerd, MN 56401
218-852-1909
www.mnlakesassn.org

Minnesota Land Trust
2356 University Ave. W., Suite 400
St. Paul, MN 55114
651-647-9590
www.mnland.org

Minnesotans for an Energy-Efficient
Economy
46 E. 4th Street #600
St. Paul, MN 55101
651-225-0878

Minn. Office of Environmental Assistance
520 Lafayette Road North
St. Paul, MN 55155-4100
800-657-3843
www.moea.state.mn.us

APPENDIX A (cont.)

Minnesota Planning
300 Centennial Bldg., 658 Cedar Street
St. Paul, MN 55155
651-297-2491

Pollution Control Agency
520 Lafayette Road North
St. Paul, MN 55155-4194
651-297-8588

Tools for Sustainability
760 James Ave.
St. Paul, MN 55102
651-767-0665

Twin Cities Green Guide
314 Clifton Ave #50
Minneapolis, MN 55403
612-871-2713
www.thegreenguide.org

U. S. Environmental Protection Agency
Office of Solid Waste
RCRA Information Center (RIC)
401 M Street, SW (Mail Code 5305)
Washington, D. C. 20460
RCRA Hotline: 800-424-9346

Solar & Wind Power Contractors

Energy Scapes, Inc.
6007 Lyndale Ave. South
Minneapolis, MN 55419

Innovative Power Systems
1153 16th Ave SE
Minneapolis, MN 55414
612-623-3246
www.wavetech.net/~ralphj

PV Power: PV Systems Design &
Installation
www.pvpower.com/pvinteg.html

Whole Builders Co-op
2928 5th Ave South
Minneapolis, MN 55408
612-824-6567

MN Sustainable Communities Network

Philipp Muessig
MN Office of Environmental Assistance
520 Lafayette Road North
St. Paul, MN 55155
651-215-0204
philipp.muessig@moea.state.mn.us

Engineering and Consulting Services

Barr Engineering
4700 West 77th Street
Minneapolis, MN 55435
952-832-2641

Carduus Consulting
5030 London Road
Duluth, MN 55804
218-525-2977

Compass Consulting
5200 Willson Road #150
Edina, MN 55424
952-929-4147

Desotelle Consulting
PO Box 3220
Duluth, MN 55803
218-728-1228

APPENDIX A (cont.)

Earth Tech
3033 Campus Dr.
Plymouth, MN
612-551-1001

HDR Engineering, Inc.
5401 Gamble Dr.
St. Louis Park, MN
612-591-5400

Mateffy Engineering, Inc.
629 Old Hwy 8
New Brighton, MN
651-636-6166

SRF Consulting Group, Inc.
One Carlson Parkway N., Suite 150
Minneapolis, MN 55447-4443
763-475-001

APPENDIX B: SOURCES

Information for Policy-makers

American Planning Association

www.planning.org

www.planning.org/info/tenthings.htm

Environmental Protection Agency

www.epa.gov

www.epa.gov/greenacres/toolkit/index.html

Metro Council

www.metrocouncil.orh/mnsmartgrowth/resources.htm

Minnesota State Legislature - Chapter 412 - the City Code

www.revisor.leg.state.mn.us/cgi-bin/getstatchap.pl

Smart Growth Network

www.smartgrowth.org

www.smartgrowth.org/library/CoPGStARP.html

www.smartgrowth.org/bookstore/icma_bookstore.html

U. S. Department of Energy

www.sustainable.doe.gov/

(Author unknown) "Coming to Terms with Sustainability." *Forum for Applied Research and Public Policy*. 1999 (Winter). V14, i4 (p. 6).

Ager, Neil. "Instruments of Change: Motivating and Financing Sustainable Development." *Journal of Development Studies*. 2000 (Feb.). V36, i3 (p. 171).

Environmental Protection Agency (EPA). Decision Maker's Guide to Solid Waste Management, 2nd Edition. August 1995. EPA530-R-95-023. Office of Solid Waste, RCRA Information Center (5305W), Washington D. C.

Environmental Protection Agency (EPA). *Bibliography of Municipal Solid Waste Management Alternatives: Source Reduction, Recycle, Landfill, Combustion*. August 1989. EPA/530-SW-89-055. Washington D. C.

Environmental Protection Agency (EPA). School Recycling Programs: A Handbook for Educators. August 1990. EPA/530-SW-90-023. Washington D. C.

APPENDIX B (cont.)

International City Management Association (ICMA). Balanced Growth: A Planning Guide for Local Governments. 1991. Edited by John M. DeGrove. Library of Congress Cataloging-in-Publication Data. Washington D. C. (pp. 163).

Kusler, Jon K. Regulating Sensitive Lands. 1980. Ballinger Publishing Company, Environmental Law Institute. Washington D. C. (pp. 317).

Minnesota Department of Economic Development. Form and Structure of the Minnesota City. (Further information unavailable).

Minnesota Planning. From Policy to Reality: Model Ordinances for Sustainable Development. September 2000. The Environmental Quality Board. Contact: John Wells; 658 Cedar St., Rm. 300; St. Paul, MN 55155; phone: 651-296-3985.

Ruffing, Kenneth. "Achieving Sustainability." *Forum for Applied Research and Public Policy*. 1999 (Winter). V14, i4 (p. 20).

Stark, Virginia J.D. Yes You Can!!! Governmental Authority for Sustainable Policy-Making. April 22, 2000: 2nd Edition. Contact: Virginia Stark, Attorney at Law; PO Box 797; Lindstrom, MN 55045; phone: 651-583-2621.

Washington County Planning and Administrative Services, Metropolitan Council. Open Space Design Development: A Guide for Local Governments. Fall 1997. BRW, Inc. Stillwater, MN.

Wilson, Alex et al. Green Development: Integrating Ecology and Real Estate. 1998. Rocky Mountain Institute, John Wiley & Sons, Inc. New York. (pp. 522).

World Wildlife Fund & The Conservation Foundation, Strategies for Source Reduction Steering Committee. Getting at the Source: Strategies for Reducing Municipal Solid Waste. 1991. WWF Publications. Washington D. C.

Information for Builders

Bitterroot Solar (do-it-yourself strategies)
www.bitterrootsolar.com

Environmental Protection Agency
www.epa.gov/greenacres/

APPENDIX B (cont.)

In Business

419 State Ave.

Emmaus, PA 18049

Phone: 610-967-4135

www.inbusiness.org

Other Useful Web Sites

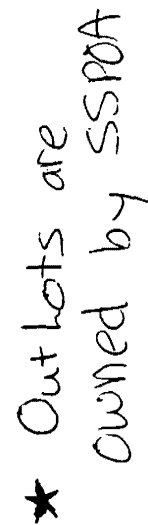
www.woodwise.org/


www.coopamerica/woodwise/consumerguideimprv.htm

www.ases.org/solarguide/index.html

Stitt, Fred A. Ecological Design Handbook: Sustainable Strategies for Architecture, Landscape Architecture, Interior Design, and Planning. 1999. McGraw-Hill. New York. (pp. 467).

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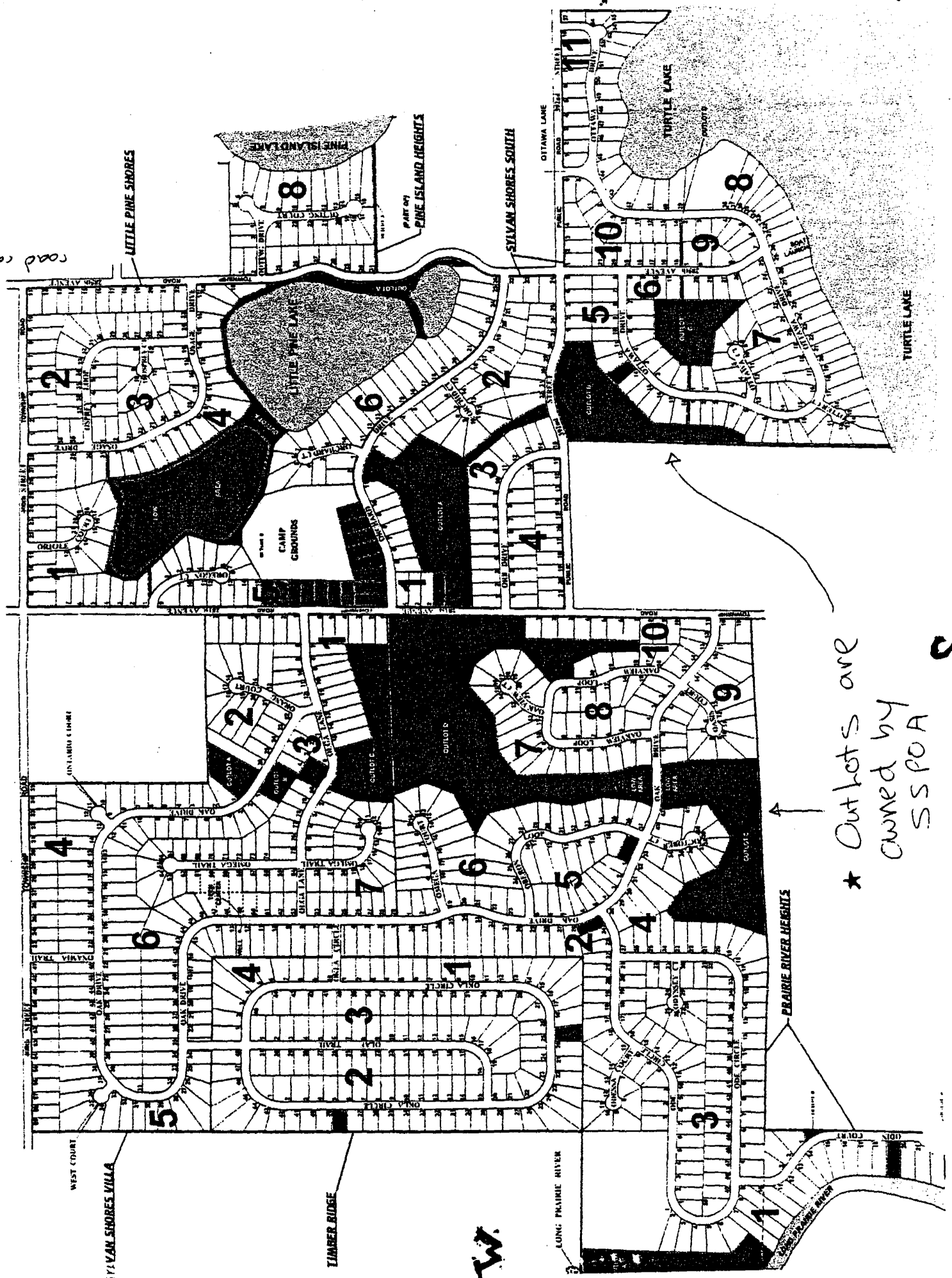
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